

ABSTRACT OF THE DISCLOSURE

A method and apparatus for using a dual-beam interferometer to test surface flatness is provided. The interferometer directs two beams focused at distinct points on a testing surface, such as the surface of a magnetic recording disc. An offset distance "d" between the two beams is provided on the target surface. In the present invention, the separation distance "d" is adjustable. The feature of adjustable separation distance in the interferometer allows the interferometer to meet the different spatial frequency requirements of various applications. In operation, first and second reflected beams are returned to an intensity beam splitter, where they are split and then recombined into two new beams of substantially equal intensity. The second of the two new light beams is constructed by the interference of half intensity of the first and half intensity of second beams, and is sent to a photodiode. The photodiode generates signals in response to the changing interference fringes caused as a result of the modulation of the optical path length difference between the original first and second beams. A local height difference on the reflective surface is calculated relative to the separation distance "d."